

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,478	04/19/2001	Jens Krause	CH920000020US1	8899

7590 06/29/2004

Gregory M. Doudnikoff
IBM Corporation T81//503
Research
PO Box 12195
Triangle Park, NC 27709

EXAMINER

PHAM, CHRYSTINE

ART UNIT

PAPER NUMBER

2122

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/838,478	Applicant(s) KRAUSE, JENS	
	Examiner Chrystine Pham	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: method 3 (FIG.3 – pg.20 line 21-22), method 13 (FIG.3 – pg.20 line 25), method 14 (FIG.4 – pg.20 line 11).
2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show method `__set__a()` 24 (FIG.3), and *modified interface 511* (FIG.5) **as described** in the specification (pg.22 line 3 and 13; pg.24 line 13 and 25, and again on pg.25 line 12). For example, on page 22 lines 11-13, the specification states “ ... The write access 43 of the class field 2 is replaced with an invocation 36 of a write access function 24 A.`__set__a()` .. ”. However, in FIG.3, reference number 24 is used to label method `__set__a(Object o)`. (Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).
3. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: grammatical error in "One another object of ..." (pg.5 line 9). Appropriate correction is required.

Claim Objections

5. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. See first subparagraph under 8 below.
6. Claims 11 and 12 are objected to because of the following informalities: incorrect spelling of the word "subprocesses" (claim 11 line 8), grammatical error in "one said class fields" (claim 12 line 9). Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 2-3, 8, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 2, it recites the limitation "original-usage method of the original class" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim. In order to continue with prosecution of the instant application, "original class" and "original-usage method" will be restated, hereinafter, as "the class" from claim 1 (line 15) and "usage method" from claim 1 (line 1-2), respectively, to reflect the examiner's best interpretation of the claim. As a consequence of the limitation being interpreted, claim 2 becomes objected to under 37 CFR 1.75(c) (see 5 above).

As per claim 3, it is rejected for being dependent on rejected base claim 2 above.

As per claim 7, it recites the limitation "the processes" in line 3. There is insufficient antecedent basis for this limitation in the claim.

As per claim 8, it recites the limitation "the modified-original class" in line 3. There is insufficient antecedent basis for this limitation in the claim. In order to continue with prosecution of the instant application, "the modified-original class" and substep(ii) will be restated, hereinafter, as the "corresponding modified class" from claim 1 (line 15) and step(b) accordingly, to reflect the examiner's best interpretation of the claim.

As per claim 11, it recites the limitation "the usage method" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by *Cirne* (U.S. Patent 6,260,187) (hereinafter *Cirne*).

As per claim 1, *Cirne* teaches a method of transforming a class (e.g., FIG.1), comprising a usage method accessing at least one class field, said class being loadable by a class loader in an object-oriented environment, said method comprising the steps of:

(a) creating from an original class, which comprises a class field, an original-class class-initialization method, and a helper class (e.g., see FIG. 2), by

- i) converting at least one said class field to an instance field and introducing the instance field into said helper class; (e.g., col.4:34-42, and col.5:4-7) and
- ii) converting the original-class class-initialization method to a helper-class instance-initialization method (e.g., col.3:65-col.4:3) and introducing it into said helper class which comprises a helper-class class-initialization method (e.g., col.4:10-14); and

(b) creating for the class a corresponding modified class by converting the usage method to a modified-usage method, wherein each access to the class field is replaced by an invocation of an access function for fetching, for a process with an instance of the helper class, from the instance, the instance field corresponding to the class field (e.g., col.5:4-11, col.17:33, FIG.6 step 350 & associated text), the helper class and the modified class being loadable the class

loader (see Java Virtual Machine col.6:49-50 & pg.3 line 1-9 of the applicant's specification).

As per claim 2, it recites limitations which have been addressed in claim 1, therefore, is rejected for the same reasons as cited in claim 1.

As per claim 3, *Cirne* teaches a method as applied to claim 2, wherein said creating step (c) comprises creating, for each class field in the original class, at least one of an access function, a read access function (e.g., col.17:33) and a write access function (e.g., col.15:46).

As per claims 4-5, they recite limitations which have been addressed in claim 1, therefore, are rejected for the same reasons as cited in claim 1.

As per claim 6, *Cirne* teaches a method as applied to claim 1, wherein transforming the class is applied to a byte code (e.g., col.21:1-2).

As per claim 7, *Cirne* teaches a method as applied to claim 1, further comprising the step of loading the helper class and the modified class by use of the class loader when one of the processes is started (see Java Virtual Machine col.6:49-50 & pg.3 line 1-9 of the applicant's specification).

As per claim 8, *Cirne* teaches a method as applied to claim 1, wherein said converting substep (ii) further comprises introducing the original-class class-initialization method into the modified-original class and replacing the original-class class-initialization by an empty method (e.g., col.12:36-41).

As per claim 9, *Cirne* teaches a method as applied to claim 1, wherein the helper-class class-initialization method creates a table (e.g., col.11:18-20, col.6:5-9, col.14:11-15).

As per claim 10, *Cirne* teaches a method as applied to claim 1, further comprising the step of transforming an original interface, comprising at least one class field and/or an original-interface class-initialization method (e.g., col.6:37-40 and col.6:55-56) into a modified interface and the helper class. Claim 10 also recites limitations which have been addressed in claim 1, therefore is rejected for the same reasons as cited in claim 1.

As per claim 11, *Cirne* teaches a computer readable code stored on computer readable media (e.g., col.3:1-9, col.17:56-60, col.18:12-14) for transforming a class in an object-oriented environment, comprising:

a first process for creating from an original class, which comprises a class field (e.g., see *fields* 224 in FIG.5 & associated text), an original-class class-initialization method (e.g., see *methods* 228 in FIG.5 & associated text), and a helper class, said first process (e.g., FIG. 1) comprising:

first subprocesses for converting at least one said class field to an instance field and introducing the instance field into the helper class (e.g., col.4:34-42, and col.5:4-7);

and second subprocesses for converting the original-class class-initialization method to a helper-class instance-initialization method (e.g., col.3:65-col.4:3) and introducing it into the helper class which comprises a helper-class class-initialization method (e.g., col.4:10-14);
and

a second process for creating for the class a corresponding modified class by converting the usage method to a modified-usage method, wherein each access to the class field is replaced by an invocation of an access function for fetching, for a process with an instance of the helper class, from the instance, the instance field corresponding to the class field (e.g., col.5:4-11, col.17:33, FIG.6 step 350 & associated text), the helper class and the modified class being loadable the class loader (see Java Virtual Machine col.6:49-50 & pg.3 line 1-9 of the applicant's specification).

As per claim 12, *Cirne* teaches, in a computing environment, a system for class transformation, said system comprising:

a class comprising at least one class field, an original-class class-initialization method, and a usage method accessing at least one of the class fields, said class residing in memory (e.g., col.3:56-60); and

a creator module for creating, out of said class, a helper class and a modified class,

wherein at least one said class fields is convertible to an instance field into said helper class (e.g., col.4:34-42, and col.5:4-7), wherein said original-class class-initialization method is convertible to a helper-class instance-initialization method (e.g., col.3:65-col.4:3) into said helper class which comprises a helper-class class-initialization method (e.g., col.4:10-14), and wherein in said usage method in said modified class each access to said class field is replaceable by an invocation of an access function for fetching the instance field corresponding to

the class field (e.g., col.5:4-11, col.17:33, FIG.6 step 350 & associated text) for a process with an instance of said helper class, from said instance, and wherein said helper class and said modified class are loadable by a class loader (see Java Virtual Machine col.6:49-50 & pg.3 line 1-9 of the applicant's specification).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:
 - o Apparatus and method for dynamically modifying class files during loading for execution, Cohen et al. (US 6072953).
 - o Method and system for loading classes in read-only memory, Tock (US 5966542).
 - o Packaging memory image files, Chapman et al. (US 6446254)
 - o Loading object-oriented computer programs, Renouf (US 20040015914)
 - o Method and system for global constant management for memory, Harscoet (US 20030088851)
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chrystine Pham whose telephone number is 703.605.1219. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q Dam can be reached on 703.305.4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/838,478
Art Unit: 2122

Page 10

Chrystine Pham
Examiner
GAU 2122

A handwritten signature in black ink, appearing to read 'Tuan Dam', with a long horizontal stroke extending to the right.

TUAN DAM
SUPERVISORY PATENT EXAMINER